



# Australian Bureau of Statistics

## **1352.0.55.085 - Research Paper: Estimating the Cyclical Component from Annual Time Series (Methodology Advisory Committee), Jun 2007**

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## Summary

### About this Release

When analysing an economic data series, we look for underlying patterns to isolate areas of interest and exclude elements that are not closely related to our interests. The ABS currently uses an 11-term Henderson filter as the detrending method to separate out the long-term trend and cyclical components within Australian multifactor productivity (MFP).

This paper investigates what are the appropriate statistical methods to extract the cyclical component for annual time series using desirable frequency properties and model fitness in the time domain. As a case study, rather than using structural economic modelling techniques, we apply several commonly used filters to the annual MFP series and evaluate their performance. We conclude that care has to be taken in order to use different methods in relation to their frequency properties, and the volatility level of the series under study.

As result of this investigation and with considerations of stability, revisions and comparability, the customised Hodrick-Prescott filter with a smoothing parameter of 25 appears to perform better than other methods in extracting the MFP cycle. Nonetheless, there remain several statistical challenges to overcome. The methodology presented in this paper paves the way to formalise a general approach to cycle extraction which can be extended to other ABS annual time series.

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